

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1 and 3-9 and 16-17 are presently active in this application, Claim 1 having been amended, Claim 2 canceled and new Claims 16 and 17 added by the present Amendment, Claims 10-15 having been withdrawn from consideration as directed to a non-elected invention.

In the outstanding Office Action Claims 1-9 were rejected under 35 USC §102(b) as being anticipated by Fukuda et al (EP-0821415 A2).

In light of the rejection on the merits, Claim 1 has been amended to include the subject matter of Claim 2 and Claim 2 has therefore been canceled. Also submitted herewith are new claims 16 and 17 which further define the subject invention in varying scope in accordance with the attached Proposed Amendment. New claim 16 finds support in the specification at page 11, lines 18-20 and FIGS. 1 and 3. New claim 17 finds support in FIGS. 1 and 3. Accordingly, no new matter has been added.

Briefly recapitulating, Claim 1 is directed to a semiconductor device including a bottom electrode; a top electrode; and a dielectric film provided between the bottom electrode and the top electrode and made of a perovskite type ferroelectrics containing Pb, Zr, Ti and O, the dielectric film comprising a first portion formed of a plurality of crystal grains partitioned by grain boundaries having a plurality of directions, wherein the crystal grain contained in the first portion is shaped conical or oval. According to claim 16, a cross section of the crystal grain contained in the first portion is wedge-shaped or elliptical in shape. According to claim 17, the crystal grains contained in the first portion and positioned adjacent to each other have different heights.

It is respectfully submitted that the above-noted claimed features are not disclosed by Fukuda et al.

More particularly, the outstanding Office action, relies on the finding that Fukuda et al. show in FIG. 1(B) the crystal grain is shaped to be conical or oval. However, Applicants respectfully disagree with this finding. On the contrary, FIG. 1(B) of Fukuda et al. illustrates a plane view of the capacitor of Fukuda et al.¹ As shown in the cross-sectional view of FIG. 1(A), crystal grains 50b of the crystal grain layer 14b are columnar crystal grains² and these crystal grains are not conical and oval in shape. Thus, it is respectfully submitted that the underpinning of the outstanding rejection as applied to amended Claim 1 is not viable.

In view of the above discussion, it is believed to be clear that Fukuda et al. do not teach the structure of Claim 1 in which the crystal grain contained in the first portion is conical or oval in shape. Similarly, it is respectfully submitted that Fukuda et al. do not teach the structure of claim 16 in which a cross section of the crystal grain contained in the first portion is wedge-shaped or elliptical in shape.

In addition, as shown in FIG. 1(A) of Fukuda et al., the crystal grains 50b contained in the crystal grain layer 14b are the same in height. Therefore, it is respectfully submitted that Fukuda et al. do not teach the structure of Claim 17 in which the crystal grains contained in the first portion and positioned adjacent to each other have different heights.

Accordingly, for the above-noted reasons, it is respectfully submitted that the outstanding rejection on the merits has been overcome and that the pending active Claims 1,

¹ See Fukuda et al., column 5, lines 27–30.

² Id., see column 7, last line to column 8, line 14.

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3-9 and 16-17 are in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Eckhard H. Kuesters
Attorney of Record
Registration No. 28,870

Customer Number

22850

Tel: (703) 413-3000

Fax: (703) 413 -2220

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